



Australian Bureau of Statistics

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Education News - July, 2010

This newsletter highlights the latest curriculum related teaching resources, student activities and statistical tools that have been developed by ABS Education Services as well as other ABS resources that are useful for schools.

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1. CensusAtSchool News



CensusAtSchool Data for 2010 NOW AVAILABLE.

The CensusAtSchool Questionnaire Phase for 2010 closed on 2 July. Thank you to everyone who participated. We had a fabulous response of over 20,000 questionnaires being submitted.

RESULTS ARE IN! Check out the data for 2010 by visiting the Random Sampler web page. **Remember you can still access and use the data even if you didn't participate in the questionnaire.** The Random Sampler allows students to extract random samples of up to 200 records at at time from the questionnaire response data. Students can conduct real investigations that interest them, make international comparisons, examine trends over time and compare themselves with other Australian students.

USA joins C@S

CensusAtSchool is an international project with students across the globe including Canada, Japan, Ireland, New Zealand, South Africa and the United Kingdom. We welcome our newest partner US CensusAtSchool. You can view the US CensusAtSchool website at: www.amstat.org/censusatschool. Alternatively, to visit the international CensusAtSchool program, go to: www.censusatschool.com. Students are able to compare results with others from across the world through the international Random Data Selector available on the International CensusAtSchool Database.

Quick C@S Mathematics Activities

Our specialist Maths Teacher consultants have been busy creating more Quick Maths Activities. These Mathematics lessons are designed to take about 20 minutes in the classroom and there are activities for all year levels from Grade 5 to Year 11. The activities can be used as is, or you can modify them for your class and learning environment.

The full list of Quick C@S Mathematics Activities is available through the CensusAtSchool Teacher Area located under the Classroom Activities.

CensusAtSchool Great Ideas!

Find fun new ways to analyse CensusAtSchool data! CensusAtSchool data can be used on graphics calculators as well as in software programs such as Tinkerplots and Fathom if you have these packages. Want to know more? Keep checking the Education Services web pages as we will add more 2010 data resources in the coming months.

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2. An Idea for the Classroom - Mathematics

Article created by Jean Arnott - Maths Specialist Teacher Consultant

Here is a problem solving task that is suitable for students wanting a challenge. Did you know that Australia's population increases by one person every 1 minute and 10 seconds? The population clock on the ABS homepage keeps a population update based on this rate of increase. In the open ended activity below, students use population statistics from which this rate was developed to check that the rate is accurate.



Try this activity with students who like a real and challenging investigation. We would love to know how it went and welcome feedback from teachers and students. Students might even like to email us to let us know how they solved the problem. One solution method is attached to the activity on the Education Services web pages under the Resources for the Classroom Mathematics Activities.

The student worksheet, teacher notes and solution for this activity are available from the Maths Activities page on the ABS website by selecting "Population Clock".

Other Mathematics Enrichment (MATE) activities are coming soon and will be listed in the Mathematics Activities web pages.

The Australian Bureau of Statistics Population Clock

TASK:



On the ABS website home page the time clock tells us that the Australian population grows by one person every 1 minute and 10 seconds. This projection is based on the estimated resident population at **30 September 2009** and when we click on 'How does this work?' we see that this growth rate is based on:

- one birth every 1 minute and 46 seconds,
- one death every 3 minutes and 42 seconds,
- a net gain of one international migrant every 1 minute and 46 seconds leading to
- an overall total population increase of one person every 1 minute and 10 seconds.

1. Is this time (1 minute and 10 seconds) exact or has it been rounded up or down?
2. How many different ways can you solve the question 'How often does our population grow by one?'
3. The population found using this model is a 'projection'. What does this mean?
4. Use your results to estimate the date that the time clock shown on the top of this page appeared on the ABS website.
5. Visit the ABS website to see if you can find other data related to our current population.

Write down the value(s) you find and on what source(s) it was based.

We would love to hear feedback from anyone who finds the activity useful or has ideas for improving it.

Do you have a classroom idea that uses ABS data or ABS Education products? Let us know at education@abs.gov.au and we can share it with schools around Australia.

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3. Using ABS Data to Address Sustainability and Environmental Issues in Your Maths Classroom

The inclusion of ‘sustainable patterns of living’ as a cross curricula perspective in the Draft National Curriculum will provide an excellent opportunity for Maths teachers to address popular issues such as sustainability and the environment within the classroom. In addition, increasing public interest in the environment and sustainability highlights the importance for schools to address these issues in their curricula. Some schools are already putting this into practice with the Australian Sustainable Schools Initiative (AuSSI).

Nationwide, more than two thousand schools are involved in AuSSI, a partnership of the Australian Government, and the State and Territory Governments that seeks to support schools and their communities to become sustainable. The first, and perhaps most difficult to implement, AuSSI goal for schools involves ‘learning and teaching for sustainability as an integral component of school curricula’. This is a challenging goal to put into practice, as it relies on strategic whole school planning to imbed sustainability within the curriculum.

The challenge to Maths teachers, to incorporate sustainability and environmental issues, is primarily a lack of centralised Maths resources incorporating these emerging topics. The ABS website provides a rich source of free and relevant online data and support materials for everyone to download. Teachers can utilise these resources to address these growing needs.

CensusAtSchool Random Sampler

The CensusAtSchool (C@S) random sampler allows a sample to be taken of Australian students who have filled in the online CensusAtSchool questionnaire. Categorical data are available for the question ‘What actions do you take at home to conserve the environment?’ Students answered yes or no to:

‘My household has installed a water tank’,

‘My household has installed a water saving shower head’,

‘I take shorter showers’,

‘I turn off the tap while I brush my teeth’,

‘I turn off appliances (e.g. TV, computer, gaming consoles) at the power point’ and

‘My household recycles our rubbish’.

There are numerical data available for the topic ‘Opinions on environmental and social issues’, where students indicate how important the issues are to them on a scale ranging from Not important to Very important. Issues include reducing pollution, recycling our rubbish, conserving water, reducing energy usage (electricity, gas, oil, for heating, lighting, car travel), conserving old growth forests and protecting coastal/marine environments.

Using other information from the random sample, data from these questions can be compared by year level, sex and other characteristics.

Lessons online

Education Services publish many different classroom support materials. There are three types of Maths lessons available, C@S Quick Activities, C@S Extended Activities and Maths Activities. The following are some examples of the lessons available online that use data about the environment and sustainability.

‘Opinions On – Are Girls More Concerned?’(CaSMa15) is an extended maths activity that uses the C@S information on sex and students opinions on actions taken to conserve water. Students analyse and graphically represent the attitudes of today’s students on environmental sustainability issues. They can then compare these attitudes to those of the community as expressed in published data. This activity is suitable

for students in years eight to ten, and there are teacher solutions and a marking rubric available to download with the activity.

'Water – Use It Wisely' (MAT02) is a maths activity that uses data from ABS publications and focuses on how Australians use water. State/territory comparisons are made between water use and where the water is used in the household. Students will need to make some simple calculations to make these comparisons. An extension exercise is also provided where students solve a set of equations to estimate the potential for water wastage. This activity is suitable for students in years seven to nine.

'Comparing Sample Size to the Whole Population- Environmental Issues' (CaSQ_29) has been designed to take less than thirty minutes. This lesson is available through the Mathematics Quick Activities Navigation Table. This rich, student centred task focuses on the individual learning concept of finding and comparing population means. Students find the mean of a population then investigate how this compares to the mean of different sized samples taken from the population. This activity is suitable for years eight to ten.

Datasets

Education Services have compiled datasets from ABS online publications to assist students to use and understand ABS data. All datasets have links to the source publication. The dataset Environmental Issues: People's Views and Practices (from cat no. 4602.0) has numerical data of percentages by state and nationally of 'Households with Garden, Proportion who Saved Water in the Garden' and 'Households with Garden, Steps to Save Water in the Garden' which has details for:

- 'Use grey water',
- 'Rainwater collected in other container',
- 'Use rainwater collected in other container',
- 'Use mulch',
- 'Plant native/low water consuming plants',
- 'Water at cooler times of the day',
- 'Water more thoroughly but less frequently',
- 'Only water when necessary',
- 'Don't water lawn',
- 'Other steps taken' and
- 'No water saving activities reported/don't know'.

This numerical data can be used in a variety of ways, for teaching basic number concepts in a sustainability context.

ABS Online Publications

The ABS has a diverse range of online publications of categorical and numerical data of data concerning the environment and sustainability, available under Topics @ a Glance, Environment and Energy Statistics. Some examples are Land Management Practices in the Great Barrier Reef Catchments, Preliminary, 2008-09 (cat. no. 4619.0) and Environmental Issues: Energy Use and Conservation (cat. no. 4602.0.55.001, Nov 2008)

Where can you get more information?

All the information and data that has been referred to in this article is free online, under creative commons licensing.

[Sustainability Education Australian Schools Sustainability Initiative \(AuSSI\)](#)

[ABS CensusAtSchool random sampler](#)

[ABS CensusAtSchool Mathematics – Quick Activities](#)

[ABS CensusAtSchool Mathematics – Extended Activities](#)

[ABS Education Services Mathematics Activities](#)

[ABS Education Services ABS Datasets](#)

[ABS Environment and Energy Publications](#)

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4. ABS Resources for Teachers - UPDATED Datasets

Education Services have recently updated the ABS datasets which include Social and Economic datasets.

These datasets have been created especially to make it easier for students to explore various social and economic issues. There are 15 Social datasets available online ranging from historical population growth, Indigenous population, life expectancy, crime, water savings, field of education as well as motor vehicle accidents. There are 15 Economic datasets including information regarding CPI, unemployment, annual gross domestic product, household assets and liabilities as well as personal finance commitments. Below is a screenshot of Social dataset 15.



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From cat. no. 4102.0 - Australian Social Trends, Mar 2010 (Data Cube 'Health - National and State Summary Tables', Table S15)

Dataset S15: Cause of Death by Motor Vehicle Accidents, Males and Females Aged 15-24, 1998-2007

| | | Cause of Death by Motor Vehicle Accidents - by State/Territory | | | | | | | | | |
|------|------------------------------|----------------------------------------------------------------|------|------|------|------|------|------|------|------|------|
| | | Rates per 100,000 people (a) | | | | | | | | | |
| | | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| NSW | Males aged 15-24 years (b) | 24 | 24 | 27 | 25 | 23 | 18 | 14 | 13 | 18 | 9 |
| | Females aged 15-24 years (b) | 8 | 9 | 9 | 7 | 5 | 7 | 7 | 3 | 5 | 3 |
| Vic. | Males aged 15-24 years (b) | 24 | 23 | 22 | 25 | 23 | 20 | 19 | 25 | 14 | 12 |
| | Females aged 15-24 years (b) | 8 | 7 | 10 | 7 | 7 | 4 | 8 | 5 | 6 | 4 |
| Qld. | Males aged 15-24 years (b) | 30 | 27 | 23 | 30 | 29 | 24 | 25 | 17 | 26 | 15 |
| | Females aged 15-24 years (b) | 10 | 7 | 7 | 7 | 12 | 8 | 8 | 8 | 6 | 4 |
| SA | Males aged 15-24 years (b) | 32 | 36 | 38 | 22 | 26 | 36 | 23 | 34 | 22 | 26 |
| | Females aged 15-24 years (b) | 6 | 8 | 8 | 7 | 8 | 12 | 8 | 7 | 10 | 8 |
| WA | Males aged 15-24 years (b) | 33 | 33 | 36 | 36 | 26 | 32 | 22 | 24 | 36 | 27 |
| | Females aged 15-24 years (b) | 13 | 8 | 14 | 9 | 10 | 13 | 11 | 9 | 11 | 12 |
| Tas. | Males aged 15-24 years (b) | 28 | 38 | 44 | 29 | 9 | 25 | 42 | 18 | 36 | 42 |
| | Females aged 15-24 years (b) | 13 | 29 | n.p. | 10 | 13 | 0 | 13 | n.p. | 19 | 3 |
| NT | Males aged 15-24 years (b) | 55 | 80 | 74 | 56 | 31 | 62 | 43 | 60 | 71 | 45 |
| | Females aged 15-24 years (b) | 48 | n.p. | 34 | n.p. | 48 | 35 | n.p. | n.p. | 6 | 12 |
| ACT | Males aged 15-24 years (b) | 50 | 12 | 16 | n.p. | 15 | n.p. | n.p. | 11 | 14 | 21 |
| | Females aged 15-24 years (b) | n.p. | n.p. | n.p. | n.p. | n.p. | n.p. | n.p. | 12 | 0 | 4 |

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5. Conferences



Queensland Association of Mathematics Teachers

Our Specialist Maths Teacher Consultants Jean Arnott and Mary-Anne Aram recently attended the Queensland Association of Mathematics Teachers (QAMT) Annual Residential Conference which took place over 25 and 26 June. The two days at the QAMT conference were an overwhelming success with the ABS trade display showing to be popular and the interesting presentation on how to use CensusAtSchool to promote statistical literacy to children.

Future Conferences

The Education Services Unit of ABS will have a representatives at various conferences over the following months:

July

Business Educators Association of Queensland

August

Canberra Maths Association

October

Maths Association of New South Wales

November

Maths Association of Western Australia

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6. STATS QUEST: We Want Your Work for Our Community Pages

Student work for the online Community pages

Have your students been using lessons or data from the ABS? Teachers are invited to submit copies of exemplary student work by post or email to the ABS Education Services Unit. Unfortunately we are unable to return original copies. From these, lessons and data will be chosen to be posted on the Education Services web pages with acknowledgement given to the student and the school. When submitting lessons or data, remember to include your permission to publish work signed by the student and yourself and include the name of your school. Also, please ensure that you include your contact details so we can contact you if necessary. In addition, all students who have work submitted will be acknowledged with a certificate... a great way to reward students and promote high quality work in your classroom.

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7. Watch This Space



The Second International Statistical Literacy Project (ISLP) Poster Competition - Get Ready!

The ISLP is running a poster competition for students in junior (those born 1995-1997) and senior (those born 1992-1994) secondary school. The posters need to demonstrate sound statistical literacy skills.

You could have your students analyse CensusAtSchool data and present their findings in poster format, then enter the best in the competition. Entry is absolutely free, but registration must be completed by the teacher. Students can work in teams of two or three.

For further details contact Education Services or go to the ISLP competition page as further information will be released soon.

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8. Recently Released Publications

Remember, **all** ABS publications are **free** to download from the **ABS website**.

The Health and Welfare of Australia's Aboriginal and Torres Straight Islander Peoples, 2010 (cat. no. 4704.0)

This release provides a comprehensive statistical overview, largely at the national level, of Aboriginal and Torres Strait Islander health and welfare.

Retail Trade, Australia, April 2010 (cat. no. 8501.0)

Contains monthly estimates of turnover for retail establishments. Trend, seasonally adjusted and original estimates are included for industry groups and states and Australia in current price terms.

Perspectives on Sport, June 2010 (cat. no. 4156.0.55.001)

Issues and debates relating to sport and sporting programs are common place within the Australian political and media landscape. The National Centre for Culture and Recreation Statistics (NCCRS), through the

'Perspectives on Sport' series attempts to provide informed commentary to assist those interested in these major issues.

Discover the ABS (cat. no. 1303.0)

Containing information about the role of the ABS, and the products and services it provides, Discover the ABS is a useful starting point for developing a greater understanding of how you can utilise the ABS to benefit your decision making.

Demography News, June 2010 (cat. no. 3106.0)

Demographic statistics provide measures of the Australian population, its size, growth, composition and geographic distribution, as well as the components that shape population change: births, deaths and migration. This newsletter provides information about the latest demographic research and analysis being undertaken by the Australian Bureau of Statistics.

Tasmania at a Glance, 2010 (cat. no. 1305.6)

Provides condensed information on Tasmania's population, finances, social and vital statistics, labour force, wages, foreign trade, price indexes, major industries and environment.

Education and Training Experience, State and Territory Tables, Australia, 2009 (cat. no. 6278.55.005)

Presents results from the 2009 Survey of Education and Training Experience for all States and Territories. Data provided focuses on participation in education and training; completed qualifications; level and field of educational attainment; details of training courses completed; training outcomes; difficulties, barriers and employer support to education and training.

House Price Indexes: Eight Capital Cities, March, 2010 (cat. no. 6416.0)

Provides estimates of changes in housing prices in each of the eight capital cities of Australia. The information is presented in the form of price indexes constructed separately for established houses and for project homes.

Corrective Services, Australia, March 2010 (cat. no. 4512.0)

Contains national information on persons in custodial corrective services in Australia. Quarterly information is presented for each state and territory. Statistics are presented by open and secure custody and periodic detention, for all prisoners and for Indigenous prisoners. Information is also presented on prisoner numbers by legal status (sentenced or unsentenced), and by sentence type.

Household Water, Energy Use and Conservation, Victoria, October 2009 (cat. no. 4602.2)

This publication summarises results from the 2009 State Supplementary Survey - Household Water, Energy Use and Conservation. The survey provides a snapshot of Victorian households' behaviour and choices in response to climate change, and also in relation to water and energy use. The survey measured the demographic characteristics of households within themes of insulation, space cooling, sources of water and energy, and swimming pools. Individuals' demographic characteristics were measured for public transport use.

You can view the full range of previously released publications from the ABS under **Previous Releases**.

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9. Contact Details

How to contact **ABS Education Services**

Free Call: 1800 623 273

email: education@abs.gov.au

Mail: GPO Box 2796

Melbourne, 3001

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